**Grade 7 Investigation: ESL Version**

**Paying Bills and Counting Profits**

**Running a Bike Tour**

Assessed on: **Criterion B**: Investigating Patterns

**Criterion C**: Communication in mathematics

1. Open an **excel** document and copy the table provided on **Paying bills and Counting Profits into excel.**

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1. Use **excel** formulas to assist you complete the table where per customer charges are:

* Income: €350
* Bike rental: €30
* Food and camping costs: €125
* And van rental is fixed at: €700

1. Open a **word** document:
   * 1. **Paste** in your table and
     2. **copy** the excel formulas you used into your word document
2. Using excel, graph the **number of customers** against **Income** and **Total expenses** on the one graph.

**Paste your graph into word**

1. (i) How does the income column change as the number of customers increases?

(ii) **Find a rule in terms of N and write a key**

(iii)Use your rule to find the total income if the company had 30 customers.

1. (i) How does the total expenses column change as the number of customers increases?

(ii) **Find a rule in terms of N and write a key**

(iii)Use your rule to find the total expenses if the company had 30 customers.

1. State what **profit** was earned for:
   * 5 customers
   * 10 customers
   * 20 customers **from your table**
2. Find a rule in terms of N to calculate profit.

Write a key for your rule.

1. Use your rule to find the profit for:
   * 5 customers
   * 10 customers
   * 20 customers
2. Do your answers match the values you found in your table?
3. Use your rule to predict the profit for 50 customers.
4. What is the least amount of customers needed to make a profit?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No of customers (N) | Income (I) | Bike rental (B) | food & camp costs (F) | van rental (V) | Total expenses (E) | Profit/Loss (P) |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |
| 15 |  |  |  |  |  |  |
| 16 |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |
| 18 |  |  |  |  |  |  |
| 19 |  |  |  |  |  |  |
| 20 |  |  |  |  |  |  |